36. (Once Amended) A method for implementing upgraded programming received in a set-top terminal for connecting a subscriber to a cable network, said method comprising the steps of:

a7 receiving a signal from a headend identifying a specified in-band channel on which a download of upgraded programming is offered; and

terminating execution of existing programming and commencing execution of said upgraded programming only when one or more predetermined criteria are satisfied.

Please add new claim 42 as follows:

42. (New) The terminal of claim 1, wherein said programming is received in

a8 packets, said terminal being configured to reassemble said packets into an executable object and stored into non-volatile memory.

REMARKS

1. INTRODUCTION

Applicants have amended claims 1, 2, 10, 16, 18, 24-25, 34 and 36, and have added new claim 42. Accordingly, claims 1-42 are presently pending in this application. Applicants hereby respectfully request reexamination and reconsideration, in view of the foregoing amendments, in light of the remarks to appear hereinafter.

2. CLAIM REJECTION UNDER 35 U.S.C. §112

Claims 1-17, 25 and 35 stand rejected under 35 U.S.C. §112 second paragraph. Applicants respectfully overcome the rejection through appropriate amendment. Accordingly, Applicants respectfully request that the rejection be withdrawn.

3. CLAIM REJECTION UNDER 35 U.S.C §102

Claims 1-4, 9-18, 24-27 and 30-36 stand rejected under 35 U.S.C. §102(b) as being anticipated by Metz et al. (U.S. 5,666,293). Applicants respectfully overcome this rejection for at least the following reasons.

Claim 1 now recites, in-part, a set-top terminal for connecting a subscriber to a cable network, "said terminal being informed by a headend of a specified in-band channel on which

a download of data or programming is offered to said set-top terminal over said cable network". Metz et al. does not teach or suggest this recitation. Metz et al. disclose a set-top terminal that has the identification of the download channel hard-coded into non-volatile memory. The Examiner's attention is respectfully directed to column 8, lines 26-32 of Metz et al.:

> *One item stored in the non-volatile memory is a channel identifier for a network program channel that will carry the operating system software, for example, channel 0. Typically, an installer will program this value in the DET memory as part of the initial installation procedure, using the keypad on the DET or the remote controller (not shown).*

The difference is more than academic. Applicants' claimed set-top terminal is flexible in regard to the specification and use of the in-band channel to be used for the download, while the set-top terminal of Metz et al. is inflexible. To change the download channel of Metz et al. requires sending an installer to the customer's location to reprogram the non-volatile memory with the new channel identifier. Such limitation is not present in Applicant's claimed set-top terminal.

For the foregoing reasons, it is respectfully asserted that the rejection of claim 1 as being anticipated by Metz et al. has been overcome. Independent claims 18, 24 and 36 have been amended to contain similar recitations. Accordingly, for at least the same reasons as set forth above in connection with claim 1, Applicants respectfully submit that the rejection of base claims 18, 24 and 36 under 102(b) has been overcome, and respectfully request that such rejection be withdrawn.

Dependent claims 2-4, 9-17, 25-27 and 30-35 contain all of the limitations of the corresponding base claim, and, therefore, for at least the same reasons set forth above, the rejection of such dependent claims under 102(b) has been overcome, and such rejection is respectfully requested to be withdrawn.

4. CLAIM REJECTION UNDER 35 U.S.C. §103

Claims 5, 28 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Metz et al. in view of Diehl et al. (U.S. 5,373,557); claims 6, 19, 29 and 37 stand rejected under 35

U.S.C. §103(a) as being unpatentable over Metz et al. in view of Mankovitz (U.S. 5,640,484); claims 20 and 38 stand rejected under 35 U.S.C. §103(a) as being anticipated over Metz et al. in view of Mankovitz, and further in view of Iggulden et al. (U.S. 5,987,210); claim 23 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Metz et al. in view of McClellan et al. (U.S. 5,619,250); and claims 7-8, 21-22 and 39-40 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Metz et al. Applicants respectfully overcome these rejections under §103(a). In particular, the identified claims all depend from one of the independent claims 1, 18, 24 and 36, and, as set forth above, have been amended, and are believed to define patentable subject matter. Accordingly, for at least the same reasons as set forth above, the rejection of these dependent claims has been overcome, and Applicants respectfully request that such rejection be withdrawn.

5. CLAIM REJECTION UNDER 35 U.S.C. §103(a)

Claim 41 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Metz et al. in view of So (U.S. 5,909,559). Applicants respectfully traverse this rejection.

In particular, neither Metz et al. nor So teach or suggest a "first processor" dedicated to providing "a user interface" and a "second processor . . . dedicated to managing a download of data or programming offered to a set-top terminal". While So may disclose dual processors multiprocessing in a dual processing mode generally, So does not teach or suggest the functions performed by each processor, as recited in claim 41. Accordingly, Applicants respectfully submit that the rejection of claim 41 is improper, and request that it be reconsidered and withdrawn.

6. NEW CLAIM 42

New claim 42, recites, in-part, that "said programming is received in packets, said terminal being configured to reassemble said packets into an executable object and stored into non-volatile memory." Metz et al. disclose a set-top terminal that first receives an operating system download which is stored into RAM, which is then checked and confirmed for errors, and is only then written to non-volatile memory. See Metz et al., column 10, lines 1-12. Metz et al. takes the download in a continuous fashion, rather than piece-by-piece (i.e., the recited "packets"). Metz et al. therefore disclose a set-top terminal that may never be able to fully receive an update on an error prone channel. In addition, the set-top terminal of Metz et

al. requires multiple steps to upgrade the operating system. First, the download of the OS to RAM, and then transfer from RAM to FLASH memory. This is slower than the set-top terminal as recited in claim 42. When considering an entire cable network, with various, different set-top terminal configurations, the additional time penalty of the system of Metz et al., in the aggregate, can be significant.

CONCLUSION

For the foregoing reasons, all pending claims are now believed to be in condition for allowance. Early receipt of a *Notice of Allowance and Issue Fee Due* is hereby respectfully requested. Any questions or concerns should be directed to Applicants' undersigned attorney.

Respectfully submitted,

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CLAIM APPENDIX

For the Examiner's convenience, all pending claims are reproduced below.

1. (Once Amended) A set-top terminal for connecting a subscriber to a cable network, said terminal comprising:

a processor; and

a memory unit;

[wherein, when] said terminal being informed by a headend of a specified in-band channel on which a download of data or programming is offered to said set-top terminal over said cable network, said processor only accepts said download on said specified in-band channel and records said download in said memory unit when one or more predetermined criteria are satisfied, said criteria when satisfied indicating [tending to indicate] that acceptance of said download will cause a minimum of [interfere] interference with said subscriber's use of said set-top terminal.

2. (Once Amended) The terminal of claim 1, wherein said one or more criteria are downloaded to said set-top terminal over said [computer] cable network.

3. (Unchanged) The terminal of claim 1, wherein said set-top terminal verifies that said data or programming offered as said download is not already resident in said memory.

4. (Unchanged) The terminal of claim 1, wherein said set-top terminal verifies that said data or programming offered as said download is specified as being intended for a class of terminals to which said set-top terminal belongs.

5. (Unchanged) The terminal of claim 1, wherein said one or more criteria include a time of day.

6. (Unchanged) The terminal of claim 1, wherein said one or more criteria include whether said set-top terminal is turned off.

7. (Unchanged) The terminal of claim 1, wherein said one or more criteria include a deadline by which acceptance of said download is required by an operator of said cable network.

8. (Unchanged) The terminal of claim 7, wherein said set-top terminal defers said deadline if said set-top terminal is being used to provide a dedicated service including recording programming in conjunction with a VCR or providing pay-per-view programming.

9. (Unchanged) The terminal of claim 1, wherein said set-top terminal signals said subscriber that said download is available and requests permission to accept said download, said one or more criteria including a positive response by said subscriber to said request for permission to accept said download.

10. (Once Amended) The terminal of claim 1, wherein said set-top terminal tunes to [a] said specified in-band channel to receive said download if said one or more criteria are satisfied.

11. (Unchanged) The terminal of claim 1, wherein if said one or more criteria are satisfied, said processor erases information in said memory unit and replaces said erased information with data or programming from said download.

12. (Unchanged) The terminal of claim 1, wherein following said download of programming, said processor will only execute newly-received programming from said download when one or more predetermined criteria are satisfied.

13. (Unchanged) The terminal of claim 1, wherein, prior to accepting said download, said processor determines whether any programming is stored in said memory which is not being executed, but which is identified as being a later version than programming being executed by said processor at that time; if said processor locates any such later version of programming in memory, said processor will terminate execution of the programming being executed, erase said terminated programming from memory and reset so as to execute said later version of said programming.

14. (Unchanged) The terminal of claim 1, wherein, when said one or more criteria for accepting said download have been satisfied, said processor will erase from said memory any older, non-executing version of said programming already resident in memory and replace said erased programming with new programming from said download.

15. (Unchanged) The terminal of claim 1, wherein said memory unit is logically partitioned into two sections, a first section for containing programming being executed by said processor and a second section for receiving and storing programming from said download.

16. (Once Amended) The terminal of claim 1, wherein each download of programming contains two versions of a programming object, a first programming object for storage in and execution from [said] a first memory section of said memory unit and a second programming object for storage in and execution from [said] a second memory section, of said memory unit wherein said processor downloads one of said two versions of programming in accordance with whether said first or second memory sections is vacant.

17. (Unchanged) The terminal of claim 1, wherein said memory unit comprises two separate memory devices, a first memory device for containing programming being executed by said processor and a second memory device for receiving and storing programming from said download.

18. (Once Amended) A set-top terminal for connecting a subscriber to a cable network, said terminal comprising:

a processor; and

a memory unit;

wherein, said set-top terminal being informed by a headend of a specified in-band channel on which a download is offered, said terminal occasionally receives [a] said download over said cable network of new programming on said specified in-band channel; and

wherein following said download of programming, said processor will only execute said new programming from said download when one or more predetermined criteria are satisfied.

19. (Unchanged) The terminal of claim 18, wherein said one or more criteria include whether said set-top terminal is turned off.

20. (Unchanged) The terminal of claim 18, wherein said one or more criteria include detection of a commercial break in television programming being received by said set-top terminal.

21. (Unchanged) The terminal of claim 18, wherein said one or more criteria include a deadline by which implementation of said new programming is required by an operator of said cable network.

22. (Unchanged) The terminal of claim 21, wherein said set-top terminal defers said deadline if said set-top terminal is being used to provide a dedicated service including recording programming in conjunction with a VCR or providing pay-per-view programming.

23. (Unchanged) The terminal of claim 18, wherein said set-top terminal signals said subscriber that new programming has been received and is ready for execution and requests permission to execute said new programming, said one or more criteria including a positive response by said subscriber to said request for permission to execute said new programming.

24. (Once Amended) A method for minimizing interruptions to use of a set-top terminal that connects a subscriber to a cable network where said interruptions result from downloading data or programming to said set-top terminal over said cable network, the method comprising the steps of:

receiving a signal from a headend identifying a specified in-band channel on which said download is available; and

accepting said download on said specified in-band channel only when one or more predetermined criteria are satisfied, said criteria [tending to indicate] when satisfied indicating that acceptance of said download will not interfere with said subscriber's use of said set-top terminal.

25. (Once Amended) The method of claim 24, further comprising downloading said one or more criteria to said set-top terminal over said [computer] cable network.

26. (Unchanged) The method of claim 24, further comprising verifying that said data or programming offered as said download is not already resident in said set-top terminal.

27. (Unchanged) The method of claim 24, wherein said method further comprising verifying whether said one or more predetermined criteria are satisfied.

28. (Unchanged) The method of claim 27, wherein said verifying comprises comparing a time of day against a predetermined acceptable time of day for accepting a download.

29. (Unchanged) The method of claim 27, wherein said verifying comprises determining whether said set-top terminal is turned off.

30. (Unchanged) The method of claim 24, further comprising signaling said subscriber that said download is available and requesting permission to accept said download, wherein said one or more criteria include receiving a positive response by said subscriber to said request for permission to accept said download.

31. (Unchanged) The method of claim 24, further comprising, subsequent to said download of programming, executing newly-received programming from said download only when one or more predetermined criteria are satisfied.

32. (Unchanged) The method of claim 24, wherein, prior to accepting said download, said method comprises:

determining whether any programming is stored in said memory which is not being executed, but which is identified as being a later version than programming running on said set-top terminal at that time; and,

if any such later version of programming is located in memory, terminating execution of the programming being executed, erasing said terminated programming from memory and resetting said set-top terminal so as to execute said later version of said programming.

33. (Unchanged) The method of claim 24, wherein, when said one or more criteria for accepting said download have been satisfied, said method further comprises erasing from said memory any older, non-executing version of said programming already resident in memory and replace said erased programming with new programming from said download.

34. (Once Amended) The method of claim 24, further comprising partitioning said memory unit into two memory sections, a first memory section for containing programming being executed by said processor and a second memory section for receiving and storing programming from said download.

35. (Unchanged) The method of claim 34, wherein each download of programming contains two versions of a programming object, a first programming object for storage in and execution from said first memory section and a second programming object for storage in and execution from said second memory section, wherein said method further comprises selectively downloading one of said two versions of programming in accordance with whether said first or second memory section is vacant.

36. (Once Amended) A method for implementing upgraded programming received in a set-top terminal for connecting a subscriber to a cable network, said method comprising the steps of:

receiving a signal from a headend identifying a specified in-band channel on which a download of upgraded programming is offered; and

terminating execution of existing programming and commencing execution of said upgraded programming only when one or more predetermined criteria are satisfied.

37. (Unchanged) The method of claim 36, wherein said one or more criteria include whether said set-top terminal is turned off.

38. (Unchanged) The method of claim 36, wherein said one or more criteria include detection of a commercial break in television programming being received by said set-top terminal.

39. (Unchanged) The method of claim 36, wherein said one or more criteria include a deadline by which implementation of said new programming is required by an operator of said cable network.

40. (Unchanged) The method of claim 39, further comprising deferring said deadline if said set-top terminal is being used to provide a dedicated service including recording programming in conjunction with a VCR or providing pay-per-view programming.

41. (Unchanged) A set-top terminal for connecting a subscriber to a cable network, said terminal comprising:

a processor unit comprising a first processor and a second processor; and

a memory unit;

wherein, said first processor is dedicated to providing a user interface and said second processor is dedicated to managing a download of data or programming offered to said set-top terminal over said cable network, such that said first processor can maintain said user interface including user services while said second processor manages a download.

42. (New) The terminal of claim 1, wherein said programming is received in packets, said terminal being configured to reassemble said packets into an executable object and stored into non-volatile memory.

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